

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior version, and listings, of claims in the application:

Listing of Claims:

Claims 1-14 (canceled).

15. (New) A method for detecting a defect in at least one of an intake-manifold pressure sensor and an ambient-pressure sensor in an internal combustion engine having a variable valve timing, comprising:

ascertaining a pressure upstream from a throttle valve of the internal combustion engine;

ascertaining a pressure in an intake manifold of the internal combustion engine;

calculating a pressure difference by subtracting the pressure in the intake manifold from the pressure upstream from the throttle valve;

comparing the pressure difference to at least one of: a) a first threshold value during throttleless operation of the internal combustion engine; and b) a second threshold value during one of throttled and unthrottled operation of the internal combustion engine; and

determining that at least one of the intake-manifold pressure sensor and the ambient-pressure sensor is defective, if at least one of: a) the pressure difference is greater than the first threshold value; and b) the pressure difference is less than the second threshold value.

16. (New) The method as recited in Claim 15, wherein at least one of the first threshold value and the second threshold value is set to a value of approximately zero.

17. (New) The method as recited in Claim 15, wherein after determining that at least one of the intake-manifold pressure sensor and the ambient-pressure sensor is defective, the method further comprising:

adjusting the internal combustion engine to an operating state that simulates an operation having fixed timing and throttled load control;

ascertaining a first load of the internal combustion engine from the pressure in the intake manifold;

ascertaining a second load of the internal combustion engine from an angular position of the throttle valve;

calculating a load difference by subtracting the second load from the first load;

comparing an absolute value of the load difference to a third threshold value; and

determining that the intake-manifold pressure sensor is defective, if the absolute value of the load difference is greater than the third threshold value, and determining that the ambient-pressure sensor is defective, if the absolute value of the load difference is one of less than and equal to the third threshold value.

18. (New) The method as recited in Claim 17, wherein the third threshold value is set to a value of approximately zero.

19. (New) The method as recited in Claim 15, wherein after determining that at least one of the intake-manifold pressure sensor and the ambient-pressure sensor is defective, the method further comprising:

adjusting the internal combustion engine to an operating state that simulates an operation having fixed timing and throttled load control;

ascertaining a first load of the internal combustion engine from the pressure in the intake manifold;

ascertaining a second load of the internal combustion engine from a measuring signal of a hot-film air-mass flow-rate sensor;

calculating a load difference by subtracting the second load from the first load;

comparing an absolute value of the load difference to a third threshold value; and

determining that the intake-manifold pressure sensor is defective, if the absolute value of the load difference is greater than the third threshold value, and determining that the

ambient-pressure sensor is defective, if the absolute value of the load difference is one of less than and equal to the third threshold value.

20. (New) A control unit for controlling an internal combustion engine having a variable valve timing, comprising:

an intake-manifold pressure sensor for providing an intake-manifold pressure signal that represents the pressure in an intake manifold of the internal combustion engine;

an ambient-pressure sensor for providing a throttle-valve pressure signal that represents the pressure upstream from a throttle valve;

a first operating state detector for providing a first status signal that represents a throttleless operating state of the internal combustion engine; and

a first logic module for determining whether at least one of the intake-manifold pressure sensor and the ambient-pressure sensor is defective, by logically combining the intake-manifold pressure signal, the throttle-valve pressure signal, and the first status signal.

21. (New) The control unit as recited in Claim 20, wherein the first logic module comprises:

a subtraction unit for calculating a pressure difference by subtracting the intake-manifold pressure signal from the throttle-valve pressure signal;

a first comparator unit for determining whether the pressure difference is greater than a first threshold value;

a second comparator unit for determining whether the pressure difference is less than a second threshold value; and

a first AND gate for ANDing a logical output signal of the first comparator unit and the first status signal.

22. (New) The control unit as recited in Claim 21, wherein the first logic module further comprises an OR gate for outputting a first error signal that represents a defect in at least one of the intake-manifold pressure sensor and the ambient-pressure sensor, the OR gate

generating the first error signal by ORing an output signal of the first AND gate and an output signal of the second comparator unit.

23. (New) The control unit as recited in Claim 21, wherein the first logic module is configured as a hardware circuit.

24. (New) The control unit as recited in Claim 22, further comprising:

a second logic module for determining whether at least one of the intake-manifold pressure sensor and the ambient-pressure sensor is defective, by logically combining the first error signal, a second status signal that indicates whether the internal combustion engine is set to an operating state having fixed timing edges and throttled load control, a first load signal that represents a load of the internal combustion engine derived from the pressure in the intake manifold, and a second load signal that represents a load of the internal combustion engine derived from an angular position of the throttle valve.

25. (New) The control unit as recited in Claim 24, wherein the second logic module comprises:

a second subtraction unit for calculating a load difference by subtracting the second load signal from the first load signal;

an absolute-value generator for calculating an absolute value of the load difference;

a third comparator unit for determining whether the absolute value of the load difference is greater than a third threshold value;

a second AND gate for ANDing the first error signal and the second status signal;

a third AND gate for generating a second error signal that represents a defect in the intake-manifold pressure sensor, by ANDing an output signal of the third comparator unit and an output signal of the second AND gate;

an inverter for inverting the output signal of the third comparator unit; and

a fourth AND gate for generating a third error signal that represents a defect in the ambient-pressure sensor, by ANDing the inverted output signal of the third comparator unit and the output signal of the second AND gate.

26. (New) The control unit as recited in Claim 25, wherein the second logic module is configured as a hardware circuit.

27. (New) A computer-readable storage medium for storing a plurality of computer-executable instructions to be executed on a computing element of a control unit for controlling an internal combustion engine having a variable valve timing, wherein the instructions, when executed on the computing element, control a method for detecting a defect in at least one of an intake-manifold pressure sensor and an ambient-pressure sensor in an internal combustion engine having a variable valve timing, the method comprising:

ascertaining a pressure upstream from a throttle valve of the internal combustion engine;

ascertaining a pressure in an intake manifold of the internal combustion engine;

calculating a pressure difference by subtracting the pressure in the intake manifold from the pressure upstream from the throttle valve;

comparing the pressure difference to at least one of: a) a first threshold value during throttleless operation of the internal combustion engine; and b) a second threshold value during one of throttled and unthrottled operation of the internal combustion engine; and

determining that at least one of the intake-manifold pressure sensor and the ambient-pressure sensor is defective, if at least one of: a) the pressure difference is greater than the first threshold value; and b) the pressure difference is less than the second threshold value.

28. (New) The computer-readable medium as recited in Claim 27, wherein the computer-readable storage medium is one of a diskette, a compact disk, and an EPROM.